CLAIMS:

1. A method of forming an X-ray layer image of an object (9) to be examined by means of an X-ray device which includes an X-ray source (2) and an X-ray detector (3), the X-ray source (2) and the X-ray detector (3) being displaced in an angular range (14) around the object (9) to be examined in order to acquire X-ray projection images from different directions, characterized in that the X-ray layer image is formed directly from the X-ray projection images, the X-ray layer image being situated in a plane which extends essentially perpendicularly to the bisector (20) of the angular range (14), and that the angular range (14) amounts to less than 180°.

2. A method as claimed in claim 1, characterized in that the position of the angular range (14) relative to the object (9) to be examined can be changed.

3. A method as claimed in claim 1, characterized in that the angular range (14) lies between 90° and 180°.

4. A method as claimed in claim 1, characterized in that the angular range (14) is less than 90°.

5. A method as claimed in claim 1, characterized in that at the most 100 X-ray projection images are acquired for the formation of the X-ray layer image.

6. A method as claimed in claim 1, characterized in that no more than 80, that is, notably between 60 and 80, X-ray projection images are acquired so as to form the X-ray layer image.

7. A method as claimed in claim 1,

characterized in that a plurality of X-ray layer images of the object (9) to be examined which extend essentially parallel to one another is formed from the acquired X-ray projection images.

8. A method as claimed in claim 1,
characterized in that the X-ray projection images are acquired by means of a C-arm X-ray device.

9. A method as claimed in claim 1,
characterized in that a plurality of X-ray layer images of neighboring thin layers is combined so as to form an X-ray layer image of a thicker slice.

10. A method as claimed in claim 1,
characterized in that the X-ray source (2) and the X-ray detector (3) are displaced along a circular trajectory around the object (9) to be examined in order to acquire X-ray projection images.

11. A method as claimed in claim 1,
characterized in that the X-ray source (2) and the X-ray detector (3) are displaced in opposite directions in parallel planes in order to acquire X-ray projection images.

12. A method as claimed in claim 11,
characterized in that only the X-ray source (2) or the X-ray detector (3) is displaced in order to acquire X-ray projection images.

13. An X-ray device, notably an X-ray device for carrying out the method claimed in claim 1, including an X-ray source (2) which can be displaced around an object (9) to be examined and an oppositely situated X-ray detector (3) for the acquisition of X-ray projection images of the object (9) to be examined in an angular range (14) around the object (9) to be examined, which device includes an image processing unit (18) for forming an X-ray layer image from the X-ray projection images and also a control unit (17) for controlling the X-ray device, characterized in that the control unit (17) is constructed in such a manner that only X-ray projection images from an angular range (14) of less than 180° are acquired for the formation of the X-ray layer image, and that the image processing unit (18) is constructed in

such a manner that the X-ray layer image is formed directly from the X-ray projection images, the X-ray layer image being situated in a plane which extends essentially perpendicularly to the bisector (20) of the angular range (14).

14. An X-ray device as claimed in claim 13, characterized in that the X-ray device includes a C-arm system.